

What is claimed is:

1. A TFT array inspection apparatus for inspecting a TFT array, comprising:

irradiating means for irradiating an electron beam on the TFT array including a specific pixel and a specific site on the TFT substrate to obtain a secondary electron signal, and

defect analyzing means for analyzing a defect of at least one of the specific pixel and the specific site based on a change in a waveform of the secondary electron signal and a driving state of the TFT array.

2. A TFT array inspection apparatus according to claim 1, further comprising scanning means for scanning the electron beam on the TFT substrate to obtain a scanning signal, and defect detecting means for detecting a defective site on the TFT substrate according to the scanning signal, said irradiating means irradiating the electron beam on the defective site to obtain the secondary electron signal so that the defect analyzing means analyzes the defective site based on the change in the waveform of the secondary electron signal and the driving state of the TFT array.

3. A TFT array inspection apparatus according to claim 2, further comprising switching means for switching operations between the scanning means and the irradiating means and operations between the defect detecting means and the defect analyzing means, said switching means synchronously switching between the scanning means and the irradiating means and between the defect detecting means and the defect analyzing means.

4. A TFT array inspection apparatus according to claim 2, wherein said defect detecting means detects the defective site including at least one of a defective pixel and a defective region having the defective pixel on the TFT substrate.

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5. A TFT array inspection apparatus according to claim 2, wherein said irradiating means is an electron gun for irradiating the electron beam on the TFT substrate so that a secondary electron is discharged from the TFT substrate.

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6. A TFT array inspection apparatus according to claim 5, further comprising detecting means located above the TFT substrate for detecting the secondary electron discharged from the TFT substrate to obtain the secondary electron signal, and signal generating means electrically connected to the TFT substrate for applying an inspection signal to the TFT substrate, said defect analyzing means being electrically connected to the detecting means and the signal generating means for analyzing the defective site based on the secondary electron signal and the inspection signal.

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7. A TFT array inspection apparatus according to claim 6, further comprising a stage for placing the TFT substrate capable of moving the TFT substrate horizontally.

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